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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,320	09/26/2003	Yohichiroh Watanabe	242938US0	5358

22850 7590 08/24/2007

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ART UNIT	**PAPER NUMBER**
1756	

NOTIFICATION DATE	DELIVERY MODE
08/24/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/670,320	WATANABE ET AL.	
	Examiner	Art Unit	
	Janis L. Dote	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3 and 8-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 8-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on Aug. 13, 2007, has been entered.

2. The examiner acknowledges the amendments to claims 1, 21, 24, and 26 filed on Aug. 13, 2007. Claims 1, 3, and 8-28 are pending.

3. The rejections under 35 U.S.C. 103(a) of claims 1, 3, 8-12, and 15-28 over US 2003/0138717 (Yagi) set forth in the office action mailed on Apr. 12, 2007, paragraphs 6 and 7, where Yagi was considered to quality as prior art under 35 U.S.C. 102(e), have been withdrawn because Yagi has been shown not to be prior art under 35 U.S.C. 103(a) and 35 U.S.C. 103(c). Applicants' representative has shown that Yagi and the instant application were owned by the same person at the time the invention in the instant application was made. See the remarks filed on Jul. 9, 2007, page 2, lines 5-7.

The rejection of claims 1, 3, 8-24, 26, and 28 under the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 26 and 28-50 of copending Application No. 11/475,165 (Application'165), set forth in the office action mailed on Apr. 12, 2007, paragraph 9, has been withdrawn in response to the cancellation of independent claim 28 filed on Jun. 29, 2007, in Application'165. None of the pending claims in Application'165 recite that the particulate material is embedded in a surface portion of the toner particles as recited in the instant claims.

4. The examiner notes that the ratio (i/ii) of the modified polyester resin (i) to the unmodified polyester resin (ii) of 5/95 to 60/60 recited in instant claim 8 is defined as a "weight ratio." See the instant specification, page 10, lines 24-26.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and

distinctly claim the subject matter which applicant regards as the invention.

Claim 24 is indefinite in the phrase "dissolving or dispersing a composition in an organic solvent, said composition comprising at least a modified polyester (A) capable of reacting with an active hydrogen" (emphasis added) because it is not clear whether the modified polyester (A) refers to the previously recited modified polyester resin or to another modified polyester resin.

Claim 24 is further indefinite in the phrase "obtaining the solvent from the solution or dispersion by removing said solvent, cleaning the toner particles and drying the toner particles" (emphasis added) for lack unambiguous antecedent basis in claim 24.

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 24 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

The claim contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

(1) Instant claim 24 recites that the toner particles are prepared by a "method comprising dissolving or dispersing a composition in an organic solvent, said composition comprising at least a modified polyester resin (A) capable of reacting with an active hydrogen, and the second resin [which has a weight average molecular weight of 2,000 to 10,000], the colorant, and the release agent, to prepare the toner particles and to be subjected to a polymerization reaction in an aqueous medium and obtaining the solvent from the solution or dispersion by removing said solvent, cleaning the toner particles and drying the toner particles."

The originally filed specification does not provide an adequate written description of the method steps recited in instant claim 24. The originally filed specification, at page 12, line 24, to page 13, line 12, describes making toner particles by a method comprising the steps of: "dissolving or dispersing a composition, which includes at least a modified polyester resin capable of reacting an active hydrogen, and a

second resin having a weight average molecular weight of from 2,000 to 10,000, a colorant, a release agent, and a compound having an active hydrogen, in an organic solvent, to prepare an oil phase liquid; dispersing the oil phase liquid in an aqueous medium including a particulate material while subjecting the modified polyester resin to a polymerization reaction to prepare a modified polyester resin and to prepare a dispersion; removing at least the organic solvent in the dispersion to form toner particles; washing the toner particles; and drying the toner particles" (emphasis added). The method steps recited in instant claim 24 are broader than those disclosed in the instant specification because they do not require the steps or components described in the originally filed specification.

(2) If the modified polyester resin (A) in claim 24 refers to the previously recited toner binder modified polyester resin, the claim is further rejected for the following reason.

The originally filed specification does not provide an adequate written description of dissolving or dispersing the toner binder modified polyester resin. Rather, as discussed in item (1), the originally filed specification discloses subjecting the modified polyester resin capable of reacting with an active hydrogen in the composition that is dissolved or dispersed in an organic solvent to a polymerization reaction to

form a modified polyester resin. The originally disclosed modified polyester resin capable of reacting with an active hydrogen is not the toner binder modified polyester resin, but is a component used to make the toner binder resin.

9. Claim 3 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants are required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 3 does not further limit claim 1, from it depends from. Claim 3 recites that the particulate material has a glass transition temperature of from 55 to 100°C, which is already required in claim 1.

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. In the interest of compact prosecution, the examiner has interpreted the limitation "modified polyester resin (A) capable of reacting with an active hydrogen" recited in instant claim 24 as not referring to the toner binder modified polyester resin previously recited in claim 24, but to a component used to make

the toner binder resin. The examiner's interpretation has antecedent basis in the originally filed specification at page 12, line 27, to page 13, line 8. Rejections based on this interpretation are set forth infra.

12. US 2003/0138717 A1 (Yagi) was published on Jul. 24, 2003. The date is prior to the filing date of Sep. 26, 2003, of the instant application. The inventive entity of Yagi differs from that of the instant application. Thus, Yagi qualifies as prior art under 35 U.S.C. 102(a).

13. Claims 1, 3, 8-12, and 15-27 are rejected under 35 U.S.C. 103(a) as unpatentable over Yagi, as evidenced by the Polymer Technology Dictionary, page 444, and by applicants' admission at page 24, line 20, to page 25, line 12, page 26, line 20, to page 27, line 2, page 28, lines 10-18, page 31, lines 11-14, and Table 1 at page 83, examples 1-6 and comparative examples 3 and 4, of the originally filed specification (applicants' admission 1).

Yagi discloses a toner comprising toner particles comprising a binder resin, carnauba wax as the releasing agent, and carbon black, and organic fine resin particles 1 adhered to the surface of the toner particles at a coverage ratio of 32%.

See paragraphs 0239-0273; example 2 in paragraph 0274; and Table 1 at page 23, example 2. The binder resin comprises a modified polyester resin and an unmodified polyester resin, low molecular weight polyester 1. The toner has a number average particle size (Dn) of 5.50 μm and a volume average particle size (Dv) of 6.07 μm, and a ratio of Dv/Dn of 1.10. The toner also has an average circularity of 0.953. See Table 1 at page 23, example 2. The average circularity, the Dv, the ratio Dv/Dn, and are within the ranges recited in instant claims 12, 17, and 18, respectively. The reference low molecular weight polyester resin has a weight average molecular weight of 6700, which is within the second resin weight average molecular weight range of 2,000 to 10,000 recited in instant claims 1, 21, 24, and 26, and an acid value of 25, which is within the acid value range recited in instant claim 9. The low molecular weight polyester resin also has a number average molecular weight of 2500, and a peak molecular weight in the range of from 1,000 to 30,000. Paragraph 0151, lines 1-2, and paragraph 0244, lines 14-15. The number average molecular weight and peak molecular weight are within the ranges of the non-modified polyester resin recited in instant claim 19. The weight ratio of the modified polyester to low polyester resin 1 is about 0.6, which is within the ratio range of 5/95 to 60/40 recited in

instant claim 8. The weight ratio was determined by the information provided in example 2 of Yagi. The carnauba wax meets the releasing agent limitation recited in instant claim 22. Organic fine resin particles 1 have a Tg of 57°C, and an average particle size of 100 nm. The Tg and average particle size meet the ranges recited in instant claims 1, 3, 21, 24, and 26 and instant claim 11, respectively. The organic fine resin particle average particle size of 100 nm is 0.016 times the average particle size of the toner particles (6.07 μm = 6070 nm), which is within the range of 0.002 to 0.2 times recited in instant claims 1, 21, 24, and 26.

Yagi further discloses that toner particles can be mixed with an external additive to assist in improving fluidity, developing property, and charging ability of the toner particles, which meets the external additive limitation recited in instant claim 23. Paragraph 0176.

Yagi also discloses that the toner can be used in a two-component developer comprising a carrier, which is coated with a resin layer. The resin layer may comprise an acrylic resin or a silicone resin. Paragraph 0222, lines 5—8, 14-15, and 17-18. The two-component developer meets the developer limitation recited in instant claim 27. Yagi discloses a toner container shown in Fig. 2. Paragraph 0236.

The Yagi toner in example 2 is obtained by: (1) preparing a master batch comprising the carbon black and a polyester resin; (2) preparing a material solution comprising the carnauba wax and the low molecular weight polyester 1; (3) forming a pigment-wax dispersion by mixing the master batch of step (1), the material solution, and additional low molecular weight polyester; (4) mixing the pigment-wax dispersion of step (3), a modified polyester resin comprising isocyanate groups, which is capable of reacting with an active hydrogen to form the urea-modified polyester, and a ketimine compound, which has an active hydrogen, in an organic solvent; (5) dispersing the mixture of step (4) in an aqueous medium comprising the organic fine resin particles, while reacting the ketimine compound with the modified polyester resin to form toner particles; (6) removing the organic solvent from the dispersion of step (5); (7) washing the toner particles resulting from step (6); and (8) drying the washed toner particles. Paragraphs 0252-0273. The Yagi process steps meet the process steps recited instant claims 1, 21, 24, and 26.

Yagi does not explicitly disclose that the binder resin in example 2 has a glass transition Tg of not lower than 35°C and lower than 55°C recited in instant claims 1, 21, 24, and 26. Nor does Yagi disclose that the binder resin comprises the

tetrahydrofuran (THF) insoluble components recited in instant claims 1, 21, 24, and 26, or the molecular weight distributions recited in instant claims 19 and 20. Nor does Yagi disclose that the modified polyester resin has the number average molecular weight or peak molecular weight recited in instant claim 19. Nor does Yagi disclose that the toner has a flow starting point of from 80 to 170°C recited in instant claim 16.

The originally filed specification discloses that the toner binder resin preferably has a Tg of not lower than 35°C and lower than 55°C. According to the originally filed specification, when the Tg is too high, the resultant toner has poor low temperature fixability; and when the Tg is too low, "the resultant toner has poor preservability and thereby the blocking problem in that the toner particles adhere to each other, resulting in formation of a block of the toner tends to occur." Instant specification, page 26, line 20, to page 27, line 2, and Table 1 at page 83, examples 1-6 and comparative example 3.

The specification discloses that the binder resin comprises THF-insoluble components in an amount of 2 to 30 wt% based on the total weight of the binder resin. According to the originally filed specification, when the amount of THF-insolubles is too low, the resultant toner has poor hot offset resistance; and when the amount is too high, the toner has poor

low temperature fixability. Instant specification, page 28, lines 10-18, and Table 1, examples 1-6 and comparative example 4.

The originally filed specification discloses at page 24, line 20, to page 25, line 12, that the THF components of the modified polyester resin and the unmodified polyester resin have a peak molecular weight and the molecular weight distributions recited in instant claims 19 and 20 "in view of a low temperature fixability and offset resistance."

The specification at page 31, lines 11-14, discloses that the toner also has a flow starting temperature as recited in instant claim 16 "in view of low temperature fixability and offset resistance."

As discussed above, the toner binder resin in the Yagi toner particles and the Yagi toner particles meet the compositional limitations recited in instant claims 1, 16, 19-21, 24, and 26; but the properties discussed supra are not disclosed expressly. As discussed supra, the Yagi toner in example 2 is obtained by a process that meets the steps recited in instant claims 1, 21, 24, and 26. Yagi teaches that its binder resin preferably has a Tg of from 50 to 70°C. According to Yagi, when the Tg is too low, the high temperature preservability of the toner deteriorates. Paragraph 0154. Yagi

discloses that the toner in example 2 has low temperature fixability and offset resistance, and does not contaminate the image forming members used, such as the fixing device and image bearing member. Paragraph 0032; and Table 3 at page 23, example 2, which reports that the toner in example 2 has a "lower fixing temperature" of 140°C and exhibits no occurrence of offset for temperatures below 220°C. Table 3 also reports that no toner filming was observed. These are the properties sought by applicants. Accordingly, because the Yagi binder resin and toner particles meet the compositional limitations recited in the instant claims and the Yagi toner appears to have the toner properties sought by applicants, it is reasonable to presume that the binder resin in the Yagi toner in example 2 has the Tg recited in instant claims 1, 21, 24, and 26, and comprises the THF insoluble components and has THF soluble component molecular weight properties recited in instant claims 1, 19-21, 24, and 26, and that the Yagi toner in example 2 has the flow starting point recited in instant claim 16. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Yagi also does not explicitly disclose that the organic fine resin particles are embedded in the surface of the toner particles as recited in instant claims 1, 21, 24, and 26.

However, as discussed above, organic fine resin particles 1 in example 2 of Yagi are present on the surface of the toner particles in a coverage ratio of 32%. The Yagi toner in example 2 is obtained by a process that meets the steps recited in the instant claims. Therefore, it is reasonable to presume that the Yagi organic fine resin particles are embedded in the surface of the toner particles as recited in the instant claims. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Yagi does not appear to exemplify organic fine resin particles comprising a crosslinked resin as recited in the instant claims. However, Yagi teaches that the organic fine resin particles can equally comprise a thermoplastic resin or a thermosetting resin. Paragraph 0078, lines 3-4. A thermosetting polymer is usually defined as "a low molecular weight polymer, which may be cured, or cross-linked so as to yield a cross-linked plastics material or a vulcanized rubber." See the Polymer Technology Dictionary, page 444. The term "crosslinking agent" broadly recited in the instant claims encompasses anything that aids the crosslinking process. It is also well known in the polymer art that crosslinked thermosetting polymers are cross-linked by crosslinking agents. Thus, on the present record, Yagi teaches cross-linked organic

fine particles that meet the cross-linked particulate resin recited in the instant claims. Yagi further teaches that the thermoplastic resins and thermosetting resins include vinyl resins, polyurethane resins, epoxy resins, or polyester resins. Paragraph 0078-0079. The fine resin particles in example 2 of Yagi comprise a resin comprising styrene and methacrylic acid, where both monomers are present in weight ratios of 0.29 (29%) based on the total monomers constituting the resin particles. The weight ratios of 0.29 were determined from the information provided in paragraph 0239 of Yagi. The weight ratios of styrene and methacrylic acid satisfy the inequalities recited in instant claim 15.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Yagi, to use a thermosetting resin as the resin in the organic fine resin particles, such that the resultant fine resin particles are cross-linked with a cross-linking agent. It would have also been obvious for that person to use the resultant organic fine resin particles as the organic fine resin particles in the toner in example 2 of Yagi. That person would have had a reasonable expectation of successfully obtaining a toner that does not prevent the toner from adhering to a receiving member and has the properties as discussed by Yagi.

14. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yagi, as evidenced by the Polymer Technology Dictionary, page 444, and applicants' admission 1, as applied to claim 1 above, combined with US 2002/0037467 A1 (Watanabe).

Yagi, as evidenced by the Polymer Technology Dictionary, page 444, and applicants' admission 1, renders obvious a toner as described in paragraph 13 above, which is incorporated herein by reference.

The claim is rejected for the reasons discussed in the office action mailed on Oct. 20, 2006, paragraph 7, which are incorporated herein by reference.

15. Applicants' arguments filed on Aug. 13, 2007, as applicable to the rejections over Yagi in paragraph 13 and 14 above have been fully considered but they are not persuasive.

Applicants assert that Yagi is not prior art because they have perfected their claim to foreign priority under 35 U.S.C. 119 to the priority document, Japanese Patent Application No. 2002-365782, filed on Jul. 9, 2007.

Applicants' assertion is not persuasive. Applicants have not indicated where in the certified English-language translation of said priority document filed on Jul. 9, 2007,

there is an adequate written description of the subject matter recited in instant claims 1, 3, 8-12, and 15-28. The examiner has not found where the limitations recited in the instant claims are described in the translation as set forth under 35 U.S.C. 112, first paragraph.

(1) In claims 1, 21, and 26, the step of dissolving and dispersing in an organic solvent a composition that comprises "a modified polyester resin (A) capable of reacting with an active hydrogen" and "a compound having an active hydrogen" does not appear to be described in the translation. The translation in paragraph 0010 discloses "dissolving a composition including at least a modified polyester resin in an organic solvent to prepare an oil phrase liquid and dispersing the oil phase liquid in an aqueous medium including a particulate material . . . while subjecting the polyester resin to a reaction such as addition polymerization with a crosslinking agent and /or an extension agent to prepare particles." That disclosure in the translation does not describe that the modified polyester resin is capable of reacting with an active hydrogen. Nor does it broadly describe a compound having an active hydrogen.

(2) In claim 24, the method steps do not appear to be described in the translation. For the reasons discussed in paragraph 8, items (1) and (2), above, the originally filed

specification does not provide an adequate written description of said method. In addition, as discussed in paragraph 11, the modified polyester resin (A) capable of reacting with an active hydrogen is interpreted to be a component used to make the previously recited toner binder modified polyester resin. See the translation at page 7, lines 10-18, which discloses that that the toner binder resin comprises a modified polyester resin being capable of reacting with active hydrogen. It does not disclose that that modified polyester resin capable of reacting with an active hydrogen is a component used to make the toner binder modified polyester resin as recited in instant claim 24.

(3) The ratio of the modified polyester resin to the unmodified polyester resin in instant claim 8 does not appear to be described in the translation. The translation in paragraph 0022 discloses that "the mixing ratio of the urea modified polyester resin (i) and the toner biding [sic] resin of a relatively low molecular weight (ii) is normally from 5/95 to 60/40" (emphasis added). The recited unmodified polyester resin instant claim 8 is broader than the urea modified polyester resin described in the translation.

(4) There is no description in the translation of the following: (a) the unmodified polyester resin acid value range recited in instant claim 9; (b) the particulate resin volume

average particle diameter range recited in instant claim 11; (c) toner particles average circularity range recited in instant claim 12; (d) the particulate resin monomer composition recited in instant claim 15; (e) the toner flow starting point (Tfb) recited in instant claim 16; (f) the toner volume average particle (Dv) size range and ratio of Dv to the number average particle size range recited in instant claims 17 and 18; respectively; (g) the tetrahydrofuran-soluble components molecular weight limitations recited in instant claims 19 and 20; and (h) the toner container in instant claim 25.

(5) The carrier layer comprising at least one member selected from the group consisting of an acrylic rein, a silicone resin and mixtures thereof recited in instant claim 27 does not appear to be described in the translation. See the translation at page 7, lines 31 and 32, which only describes a "carrier layer formed from at least one of an acrylic acid and a silicone resin."

Accordingly, for the reasons discussed above, Yagi is prior art to the subject matter recited in instant claims and the rejections in paragraphs 13 and 14 over Yagi stand.

16. US 2003/0152859 A1 (Emoto'859) was published on Aug. 14, 2003, and has an effective filing date of Nov. 4, 2002. Both dates are prior to the filing date of Sep. 26, 2003, of the instant application. The inventive entity of Emoto'859 differs from that of the instant application. Thus, Emoto'859 qualifies as prior art under 35 U.S.C. 102(a) and under 35 U.S.C. 102(e). Accordingly, Emoto'859 qualifies also as prior art under 35 U.S.C. 103(a) and 103(c).

17. Claims 1, 3, 8-11, 13, 14, 17, 18, 21-25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emoto'859, as evidenced by applicants' admissions at page 41, line 10, to page 42, line 8, of the instant specification (applicants' admission 2), combined with US 4,980,257 (Anno).

Emoto'859 discloses a developer comprising a magnetic carrier coated with a silicone resin layer and a toner that comprises toner particles. The toner particles comprise a binder resin, carnauba wax as the releasing agent, and a colorant. The binder resin comprises a modified polyester resin and an unmodified polyester that are present in a weight ratio (modified to unmodified) of about 0.31, which is within the ratio range of 5/95 to 80/20 recited in instant claim 8. See example 4 at page 12, and paragraph 0214. The amounts of the

modified and unmodified resins were determined from the information provided in example 4. The magnetic carrier meets the carrier limitation recited in instant claim 27. The toner particles further comprise a charge control agent fixed on the surface of the toner particles in an amount of 0.25 parts by weight per 100 parts by weight of toner particles, and externally added hydrophobic silica and titanium oxide. Paragraphs 0129-0130 and paragraph 0147, lines 17-18. The binder resin comprises 6 wt% of tetrahydrofuran insoluble components, which is within the amount ranges recited in instant claims 1, 21, and 24. The binder resin has a peak molecular weight Mp of 6,500, a number-average molecular weight Mn of 3,500, and a Tg of 49°C. See Table 1, example 4. The binder resin Tg meets the Tg range recited in instant claims 1, 21, and 24. The toner has a spindle form and a volume average particle size (Dv) of 6.2 μm, and a ratio of the volume average particle size (Dv) to the number average particle size of 1.10. Paragraph 0147, lines 12-13, and Table 2, example 4. The volume average particle size Dv and ratio Dv/Dn meet the particle size limitation and ratio Dv/Dn limitation recited in instant claims 17 and 18, respectively. The spindle form meets the form limitation recited in instant claim 13. Emoto'859 further

teaches a container comprising said toner. Paragraph 0117, image developer **4** in Fig. 1.

According to Emoto'859 its toner provides high quality images having good reproducibility of a micro dot image. The toner has highly reliable cleanability, good low-temperature fixability, and good transferability. Paragraphs 0011-0012.

Emoto'859 does not disclose that the toner satisfies the dimensional relationships recited in instant claim 14. However, as discussed above, the toner disclosed by Emoto'859 has a spindle form that meets the shape limitation recited in instant claim 13. Furthermore, the instant specification at page 41, lines 10-25, discloses that when the ratio r2/r1 is too small, the dot reproducibility and transfer efficiency deteriorate; if the ratio r2/r1 is too large, the toner has a "form near the spherical form and therefore the cleaning problem tends to occur." The instant specification at page 41, line 26, to page 42, line 8, also discloses that if the ratio r3/r2 is too small, the toner has "a form near a flat form, and thereby the toner has low transferability," and when the ratio r3/r2 is 1.0, the "toner can be rotated while the major axis is the rotation axis." The Emoto'859 toner in example 4 exhibits good cleanability, dot reproducibility, transferability, and image qualities. See Emoto'859, Table 3 at page 15, example 4. The

Emoto'859 toner exhibits the properties sought by applicants. Accordingly, because the Emoto'859 toner has a spindle form and appears to exhibit the properties sought by applicants, it is reasonable to presume that the Emoto'859 toner satisfies the dimensional relationships recited in instant claim 14. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Emoto'859 does not disclose that the unmodified polyester resin has a weight-average molecular weight as recited in instant claims 1, 21, and 24. However, Emoto'859 teaches that the unmodified polyester resin preferably has a weight average molecular weight of 10,000 to 300,000, which overlaps the range of 2,000 to 10,000 recited in instant claims 1, 21, and 24. Paragraph 0072, line 10, and paragraph 0074, lines 3-5. Emoto'859 also teaches that the unmodified polyester resin has an acid value of 1 to 30 mg KOH/g, which meets the acid value range of 0.5 to 40 mg KOH/g recited in instant claim 9. Paragraph 0075, lines 2-3.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Emoto'859, to use a unmodified polyester resin having a weight-average molecular weight and an acid value as recited in the instant claims as the unmodified polyester in the toner in example 4 of Emoto'859.

That person would have had a reasonable expectation of successfully obtaining a spindle shaped toner having the benefits disclosed by Emoto'859.

Emoto'859 does not disclose that the surface of the toner particles in example 4 comprises a particulate material where the particulate material is embedded on the surface of the toner particles as recited in instant claims 1, 21, and 24.

Anno teaches thermally fixing minute cross-linked vinyl resin particles **a** having a Tg of 83°C and minute vinyl resin particles **b** having a Tg of 81°C to the surface of toner particles using a heat-treating and impact type modifying machine, the Nara Hybridization System. Both minute resin particles **a** and **b** have an average particle size of 1 micron. Col. 16, lines 40-45; col. 20, lines 51-55; col. 21, lines 24-58; and col. 23, lines 43-55. The Tg's are within the Tg ranges recited in instant claims 1, 3, 21, and 24. The minute resin particles **a** and **b** meet the compositional limitations recited in instant claims 1, 10, 21, and 24. The average particle size of 1 micron is about 0.16 times the average particle size of the Emoto'859 toner particles in example 4 (6.2 μm = 6200 nm), which meets the particle size limitation recited in instant claims 1, 21, and 24. Anno further teaches that it is desirable that the minute resin particles of the first thermoplastic resin have an

average particle size of 0.05 to 3 microns, i.e., 50 nm to 3000 nm, that the minute resin particles of the second thermoplastic resin have an average particle size of 0.4 to 3 microns, i.e., 400 to 3,000 nm, and that both are no less than 1/100 and no more than 1/5 of the average particle size of the toner particles. Col. 11, lines 17-23. The average particle size ranges of the minute resin particles overlap the particle range of 50 to 500 nm recited in instant claim 11. According to Anno, toner particles comprising the minute resin particle **a** and **b**, as taught by Anno, has stable charging properties, high flowability, and high cleaning property. Col. 3, lines 54-58, and Tables 3 and 4 at cols. 27-30, example 1 and comparative example 10, which does not comprise any minute resin particles.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Anno, to add the Anno minute resin particles **a** and **b** to the surface of the toner particles rendered obvious over the teachings of Emoto'859 in the manner taught by Anno. That person would have had a reasonable expectation of successfully obtaining a toner that has high flowability, stable charging property, and high cleaning property, as disclosed by Anno.

Instant claims 1, 21, and 24 are written in product-by-process format. The Emoto'859 toner in example 4 is not

obtained by the process steps recited in instant claims 1, 21, and 24. However, as discussed above, the combined teachings of Emoto'859 and Anno render obvious a toner that meets the compositional limitations recited in instant claims 1, 21, and 24, and that would appear to have very similar properties in use. Accordingly, the toner rendered obvious over the combined teachings of Emoto'859 and Anno appears to be the same or substantially the same as the toner obtained by process steps recited in instant claims 1, 21, and 24. The burden is on applicants to prove otherwise. Marosi, supra; Thorpe, supra; MPEP 2113.

18. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Emoto'859, as evidenced by applicants' admission 2, as applied to claim 1 above, combined with Watanabe.

Emoto'859, as evidenced by applicants' admission 2, renders obvious a toner as described in paragraph 17 above, which is incorporated herein by reference.

Emoto'859 further discloses forming a toner image on a receiving member and fixing the toner image to the receiving member with a fixing roller. Paragraph 0210. However,

Emoto'859 does not exemplify the use of the fixing belt device recited in instant claim 28.

Watanabe teaches a fixing device comprising a fixing belt **B** and a pressure roller **R2** to be used in fixing a toner image to a receiving member. See Fig. 1 and paragraphs 0131-0132. The fixing belt **B** is supported by the heat roller **R3** and the fixing roller **R1**. Watanabe teaches that at the nip section between the fixing belt **B** and the pressure roller **R2**, the fixing belt **B** is "caved in to prevent the offset problem and a problem in which the receiving paper is caught by the fixing belt **B**." According to Watanabe, when the fixing belt **B** or both the fixing belt **B** and the fixing roller **R1** deform to a U shape at the nip section, "the releasability of the toner image from . . . the fixing belt **B** is increased; and the receiving paper **Pa** is discharged at a relatively large peeling angle from . . . the fixing belt **B**." Paragraph 0135.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings in Watanabe, to use the fixing device comprising a fixing belt and a pressure roller as taught by Watanabe as the fixing device in the image forming method taught by Emoto'859 using the toner rendered obvious over the teachings of Emoto'859 and Anno. That person would have had a reasonable expectation of successfully obtaining a method for

fixing a toner image that provides a fixed toner image on a receiving member having the benefits disclosed by Emoto'859 and Anno and that prevents toner offset and paper jam at the fixing nip as taught by Watanabe.

19. Claims 1, 3, 8-24, 26, and 28 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 28-30 and 32-50 of copending Application No. 11/545,429 (Application'429).

Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in Application'429 renders obvious the subject matter recited in the instant claims.

Reference claim 28 of Application'429 recites an image forming method comprising the step of fixing a toner image on an image bearing material by passing the image bearing material through a nip between a fixing belt and a pressure member as recited instant claim 28. The reference toner is obtained by process steps that meet the process steps recited in instant independent claims 1, 21, 24, and 26. The toner comprises toner particles comprising a binder resin, a colorant, and a release agent and a particular material embedded on the surface of the toner particles. The binder resin comprises a modified

polyester resin and a second resin having a weight average molecular weight of 2,000 to 10,000 as recited in instant independent claims 1, 21, 24, and 26. The binder resin has a glass transition (Tg) temperature that meets the Tg range recited in instant independent claims 1, 21, 24, and 26. The particulate material has an average particle diameter that meets the particle size limitation recited in instant claims 1, 21, 24, and 26. The particulate material comprises a cross-linked resin that comprises a vinyl resin. The term "crosslinking agent" broadly recited in the instant claims encompasses anything that aids the crosslinking process. It is also well known in the polymer art that crosslinked polymers are cross-linked by crosslinking agents. Thus, on the present record, the reference claims of Application'429 recite a crosslinked particulate resin material that meets the particulate resin crosslinked with a crosslinking agent as recited in instant claims 1, 10, 21, 24, and 26.

Reference claim 28 does not recite that the toner binder resin comprises a tetrahydrofuran (THF)-insoluble component as recited in instant claims 1, 21, 24, and 26. Nor does reference claim 28 recite that the particulate material have a glass transition temperature recited in instant claims 1, 3, 21, 24, and 26.

However, reference claim 30, which depends from reference claim 29, which in turn depends on reference claim 28, requires that the particulate material have a Tg of 55 to 100°C that meets the Tg limitation as recited in instant claims 1, 3, 21, 24, and 26. Reference claim 33, which depends from reference claim 28, requires that the toner binder resin comprise THF insolubles that meet the THF-insoluble limitations recited instant claims 1, 21, 24, and 26. Reference claims 35-47, 49, and 50, which depend from either reference claims 28 or 29, recite the binder resin limitations, the particulate material limitations, the toner particle size and shape limitations, and other toner compositional limitations recited in instant dependent claims 8-20, 22, and 23, which depend from instant claim 1.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Application'429, to make and use a toner as recited in the instant claims. That person would have had a reasonable expectation of successfully obtaining a toner, a method of making said toner, and a method of fixing a toner image using said toner that meet the limitations recited in the instant claims.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Aug. 18, 2007